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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/918,018	07/30/2001	Hitoshi Shimizu	FUSO1.001AUS	1041

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KNOBBE MARTENS OLSON & BEAR LLP
2040 MAIN STREET
FOURTEENTH FLOOR
IRVINE, CA 92614

EXAMINER

RODRIGUEZ, ARMANDO

ART UNIT	PAPER NUMBER
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2828

DATE MAILED: 11/06/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/918,018

Applicant(s)

SHIMIZU ET AL.

Examiner

Armando Rodriguez

Art Unit

2828

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 October 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-32 is/are pending in the application.
- 4a) Of the above claim(s) 7-10 and 24-32 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6 and 11-23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.



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Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2. 6) ☐ Other: _____

DETAILED ACTION

Election/Restrictions

Applicant's election with traverse of group I claims 1-6 and 11-23 in Paper No. 4 is acknowledged. The traversal is on the ground(s) that the inventions appear to have overlapping search area. This is not found persuasive because the search required by group I is not required for group II, since group II has a separate status in the art by having a different classification.

The requirement is still deemed proper and is therefore made FINAL.

Priority

Applicant cannot rely upon the foreign priority papers to overcome this rejection because a translation of said papers has not been made of record in accordance with 37 CFR 1.55. See MPEP § 201.15.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Garbuzov et al (PN 6,330,263) in view of Zhang et al (PN 6,566,688).

Garbuzov et al and Zhang et al disclose semiconductor laser having quantum wells composition, which produce long wavelengths of at least 1.2 μm .

Regarding claims 1,2,3,5

Garbuzov et al discloses in column 6 lines 40-67, a semiconductor laser having a substrate (11) of GaAs or InP and in column 7 lines 11-29, discloses the quantum wells (14) and (16) as having the composition of GaInAsSb, where the elements have different contents and producing long wavelengths in the range of 1.2 μm to 1.3 μm .

In the abstract Zhang et al disclose a substrate of GaAs and quantum wells of InGaPAsSb, where each element has different contents but produce long wavelengths in range of 1.1 μm to 1.5 μm , as described in column 5 lines 1-6.

Garbuzov et al and Zhang et al et al discloses the claimed invention except for the recited ranges of the element content. It would have been obvious to one having ordinary skill in the art at the time the invention was to obtain these working ranges, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or working ranges involves only routine skill in the art.

In re Aller, 105 USPQ 233.

Regarding claims 4,6,

Garbuzov et al discloses a semiconductor laser but is silent as the particular structure of the laser as VCSEL or edge emitting.

In column 1 lines 9-13, Zhang et al describes semiconductor lasers as any of VCSEL and edge emitting lasers.

Therefore, it would have been an obvious matter of design choice to arrange the semiconductor laser as a VCSEL or an edge emitting laser, since it appears that the invention would perform equally well in any of the well-known semiconductor laser structures.

Claims 11-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Van de Walle et al (PN 5,383,211) in view of Ouchi (PN 6,046,096), Zhang et al (PN 6,566,688) and Spruytte et al (US 2002/0075920).

Regarding claims 11,12,13,15,

Van de Walle et al discloses a semiconductor laser having a substrate of GaAs and having quantum wells of InGaAsNSb, which provides a wavelength in the range of 850 nm to 1100 nm, as described in column 5 lines 1-5 and column 6 lines 15-40.

Ouchi discloses a semiconductor laser having a substrate (201) of GaAs and having quantum wells of InGaAsN, where group V elements as Sb,P and As can be used to and is partly substituted by N, where the laser provides a wavelength of 1.3 μ m, as described in column 8 lines 50-52 and column 9 lines 25-40.

Van de Walle et al and Ouchi et al discloses the claimed invention except for the recited ranges of the element content. It would have been obvious to one having ordinary skill in the art at the time the invention was to obtain these working ranges, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or working ranges involves only routine skill in the art. **In re Aller, 105 USPQ 233.**

Regarding claims 14,16,22,23

Van de Walle et al discloses a semiconductor laser but is silent as the particular structure of the laser as VCSEL or edge emitting.

In column 1 lines 9-13, Zhang et al describes semiconductor lasers as any of VCSEL and edge emitting lasers.

Regarding claims 17,18,

Van de Walle et al does not disclose using barrier layers of GaNAs.

However, Spruytte et al teaches of a semiconductor laser using barrier layers of GaNAs having element content within the range of 0 to 0.05, which provides wavelengths of at least 1.2 μm , as described in the abstract and in paragraph [0029].

Therefore, it would have been obvious to a person having ordinary skill in the art to use the barrier layers of Spruytte et al within the semiconductor laser of Van de Walle et al because it would provide a semiconductor laser which produces long wavelengths.

Regarding claim 19,20,21,

Van de Walle et al discloses a semiconductor laser having a substrate of GaAs and having quantum wells of InGaAsNSb, which provides a wavelength in the range of 850 nm to 1100 nm, as described in column 5 lines 1-5 and column 6 lines 15-40.

Ouchi discloses a semiconductor laser having a substrate (201) of GaAs and having quantum wells of InGaAsN, where group V elements as Sb,P and As can be used to and is partly substituted by N, where the laser provides a wavelength of 1.3 μm , as described in column 8 lines 50-52 and column 9 lines 25-40.

Van de Walle et al and Ouchi et al discloses the claimed invention except for the for recited ranges of the element content. It would have been obvious to one having ordinary skill in the art at the time the invention was to obtain these working ranges, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or working ranges involves only routine skill in the art.

In re Aller, 105 USPQ 233.

Van de Walle et al does not disclose using barrier layers of GaNAs.

However, Spruytte et al teaches of a semiconductor laser using barrier layers of GaNAs having element content within the range of 0 to 0.05, which provides wavelengths of at least 1.2 μm , as described in the abstract and in paragraph [0029].

Therefore, it would have been obvious to a person having ordinary skill in the art to use the barrier layers of Spruytte et al within the semiconductor laser of Van de Walle et al because it would provide a semiconductor laser which produces long wavelengths.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Armando Rodriguez whose telephone number is (703) 308-6218. The examiner can normally be reached on 10-hour day / M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Ip can be reached on (703) 308-3098. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-4881.

Armando Rodriguez
Examiner
Art Unit 2828



Paul Ip
Supervisor
Art Unit 2828

AR/PI